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Canon AE-1 Program - a mirror squeal repair tutorial
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Disassembly Highlights

Locations of left-hand threads:

*Screws holding pinions on top of winding rollers

Settings for disassembly - ASA 100 Program for reference

Precautions -

- Remove the battery before disassembly or unsoldering wires
- Be careful to avoid turning the film-speed brush after you remove the film-speed dial at ASA 100 and note it's position for reassembly

Disassembly Sequence Covers

- 1 - Bottom Cover (3 screws in chrome models, 2 in black models)
- 2 - Front cover/apron (4 screws)
- 3 - Top Cover (cable release in side release button will be loose)
- 3a - rewind knob & film-speed dial (snap ring and loose washer)
 - * loose parts - wave washer, black plastic dial bearing
- 3b - black wind lever cover (double-stick tape)
- 3c - release button decorator plate (2 screws)
- 3d - wind lever screw (unscrew retainer - (loose wave & nylon washers, wind lever cam)
- 3e - on/off self-timer lever (snap ring. Wave washer, black plastic washer)
- 3f - top cover (6 screws - 2 each end, 2 by eyepiece, 2 at the front formerly hidden by the front cover/apron)
- 4 - Unsolder the black wire from the P.C. sync terminal (fig. 1)

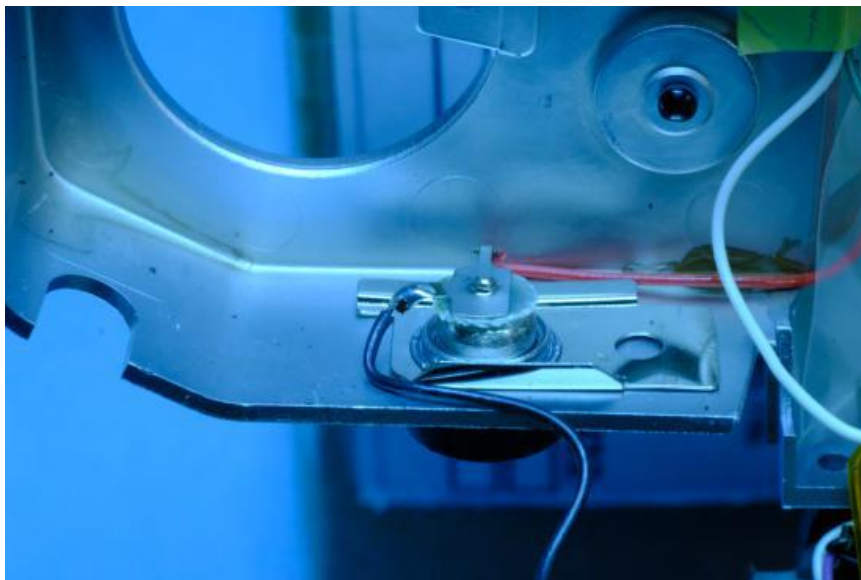


Fig. 1

5 - Unsolder the white and green top cover wires from the FPC (fig. 2)

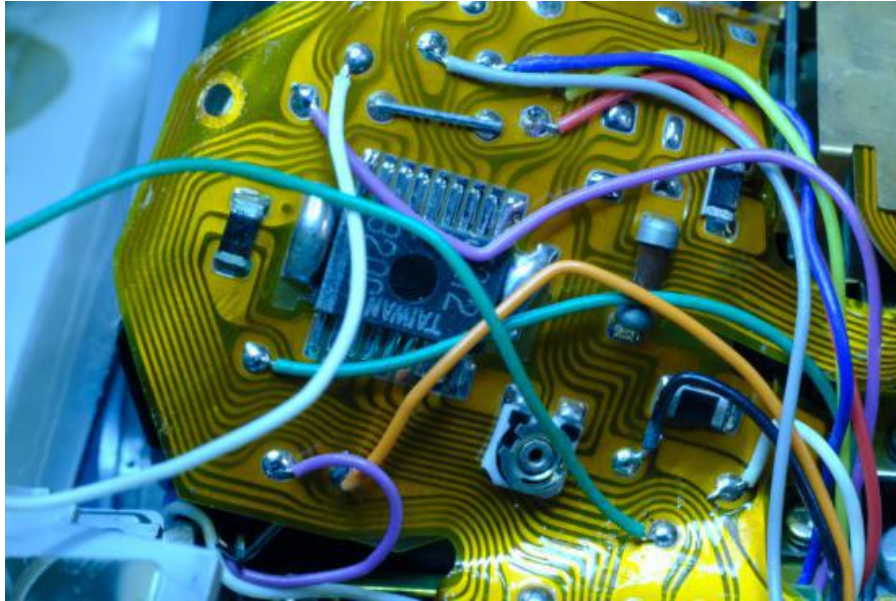


Fig. 2

Reassembly Highlights

- 1 - After resoldering the top cover wires, slip the black X-Sync wire under the piezo beeper to avoid pinching it under the top cover
- 2 - Route the white and green top cover wires so they don't interfere with the film-speed contact or the battery-test switch

Sequence to remove the mirror box

- 1 - Right and Left front leatherette
- 2 - Remove cover -rewind side of body (3 screws, 2 spacers for the back latch are loose)
- 3 - unfold section of FPC covering mg1 wires (fig.3)



Fig.3

- 4 - Unsolder red and black mg1 wires

- 5 - Unsolder wires from top of FPC (fig. 4)
- violet to SW1
 - white and black to maximum aperture resistor
 - orange to S.A.V.E. (diaphragm resistor contact)
 - blue, green, violet and red to the LED display board
 - yellow to piezo beeper
 - gray to battery test switch

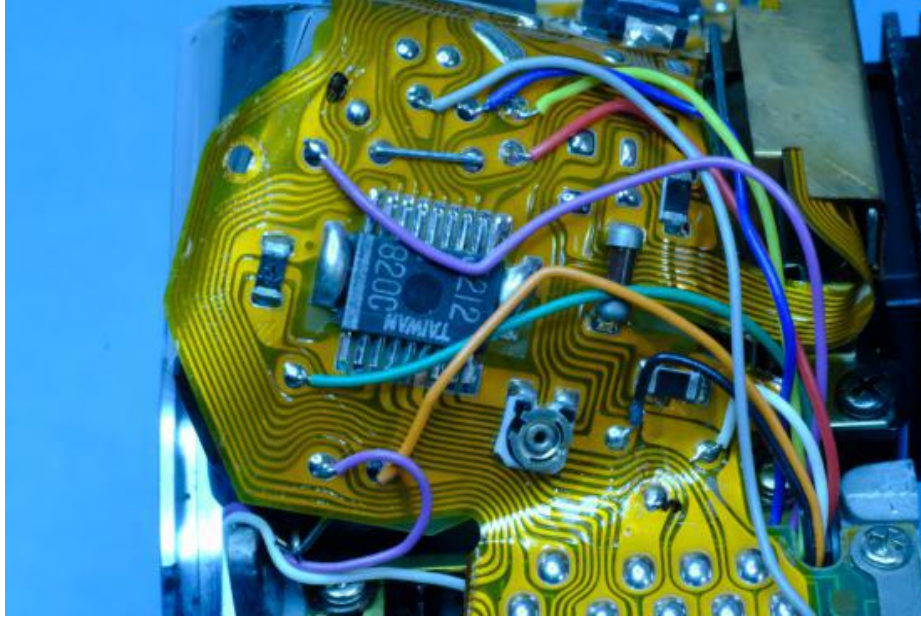


Fig.4

- 6 - Remove film-speed brush contact (snap ring)
- 7 - Remove battery test ground plate w/switch (2 screws fig.5)

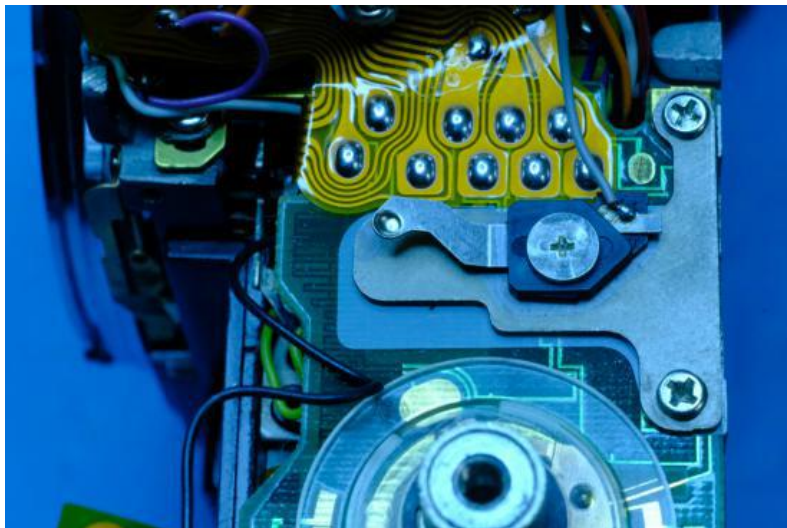


Fig.5

- 8 - Remove screw holding film-speed base plate (1 screw fig. 6)



Fig.6

9 - Lift up film-speed baseplate to reach piezo beeper and remove the piezo beeper (3 screws - long screw goes to the front fig. 7)



Fig. 7

10 - Remove 2 upper mirror box screws (back of camera near eyepiece)

11 - Remove 5 front plate screws note positions, lift out the mirror box assembly (be careful not to damage/tear the FPC (fig. 8)



Fig.8

Looking at the wind side of the mirror unit, note the position of the mirror governor flywheel - place one drop of shutter oil on the bearing (fig. 9)

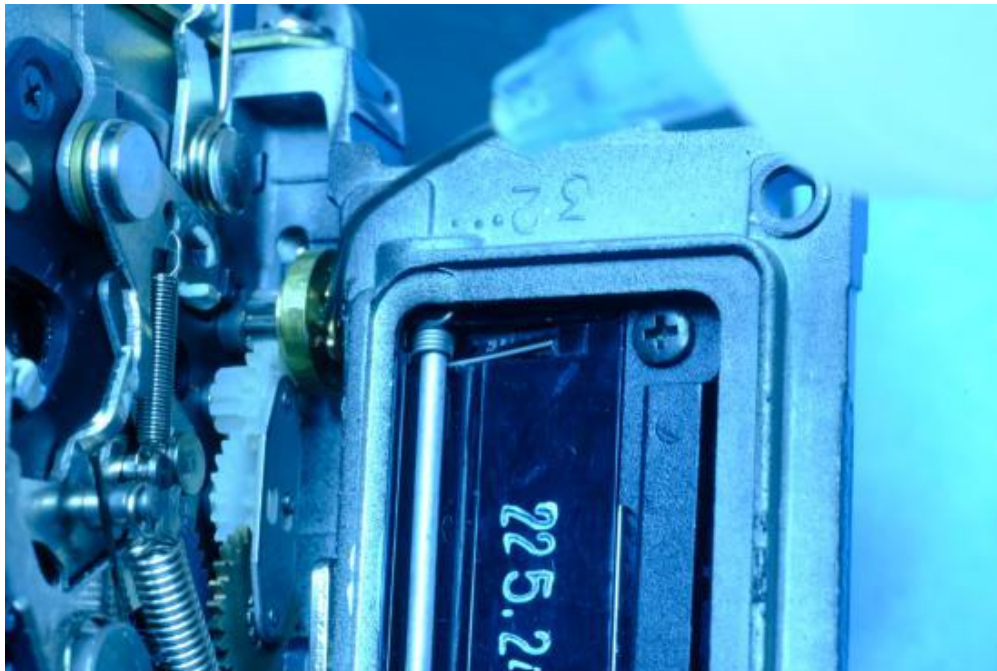


Fig. 9

Reassembly Highlights

1 - Replace the front plate/mirror unit with the shutter and mirror released, mirror down and the mg2 magnet must also be in the released position (fig. 10)

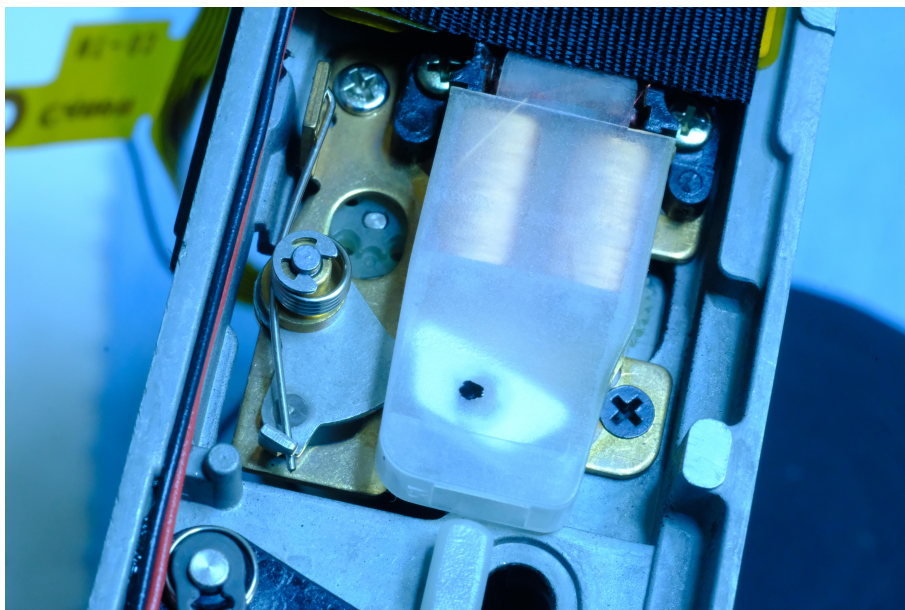


Fig.10

2 - Route the wires to the back of the FPC (fig. 4) as you seat the front plate/mirror unit.

3 - After installing the front plate/mirror unit, test by winding the wind lever, make sure you can not continue to advance the wind lever after the cocking stroke - release the mirror by pushing the mg2 armature away from the magnet (fig 10) The mirror should release the shutter and the shutter 2nd curtain should release the mirror and the mirror should drop down. You should be able to repeat this test and observe the mirror action without the familiar "squeal".

4 - The rest of the reassembly should be the reverse of disassembly.

Note:

This sequence depicts the steps required for lubricating the mirror governor, during disassembly the magnets controlling the aperture diaphragm, mirror release and the shutter second shutter curtain, all switches and brush contacts should be cleaned, any bad seals and cushions replaced including any obviously defective/damaged parts. Please refer to the service manuals available at learncamerarepair.com for more information and troubleshooting.